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FOREST INSECT SURVEY OF SEQUOIA NATIONAL PARK

Season of 1941

In September of this season an inspection survey was made in parts of the Sequoia National Park to check on the status of forest insect conditions in some of the more important areas of intensive use by visitors to the Park. This survey was made by a field crew from the Berkeley Laboratory of the Bureau of Entomology and Plant Quarantine. The personnel of this crew included G. R. Struble, C. B. Eaton, and H. L. McKenzie under the leadership of J. E. Patterson. The field work was carried out during the period September 17 to 20, 1941.

The survey was largely of the reconnaissance type supplemented by road stripping and plot cruises. Road strips were run on the Generals Highway, in Takopah Valley, Giant Forest, and on the East Kaweah River. The Atwell Mill plot was cruised. The Woodward Creek plot which is just a short distance north of the Park boundary is also included since it is representative of the Jeffrey pine stands within the Park. The records for these plots are summarized in Table I.

On the whole, bark beetle conditions in the principal recreational areas of the Park are satisfactory with only endemic losses throughout. No serious infestations were located.

CONDITIONS BY AREAS

Marble Fork Drainage

No infestation of importance was detected in any part of this area. The combined loss in both ponderosa pine and sugar pine will not exceed 5 trees per section. Jeffrey pine losses are practically nil. Fir losses are somewhat higher and will average about 8 trees per section. The trend in pine infestations appears to be toward decreasing losses, but fir losses are increasing.

Giant Forest to Lodgepole

Current losses here are definitely lower in both pine and fir, showing a marked decline since 1939. Only 4 beetle killed trees of all species were observed on this area.

Lodgepole (Takopah Valley)

The mountain pine beetle infestation in lodgepole pine, which was formerly active in these stands, has practically disappeared. Only a few red trees were found and these had produced very light broods. No attacks of the year were found.

Middle Fork Drainage

There has been a marked decline since 1939 in the amount of infestation in this drainage. The current loss is very slight since only 4 red pines and 2 faded pines were visible throughout the basin. Fir losses are also negligible and will not exceed 4 or 5 trees per section.

East Fork Drainage

Pine losses on this area remain at a low point, although fir losses are slightly increased but not alarming. The cruise of Atwell Mill plot supports the general reconnaissance findings and shows no increase in pine losses. The marginal stands of this area are remarkably free of any infestation.

Hockett Meadow

This area was not visited. However, the fringe of lodgepole pine on Horse Creek, which is visible from the East Fork, was noted to be quite free of recently faded trees.

South Fork Drainage

This area was not observed. An extensive windfall, which occurred in February 1941, was examined by Ranger Augustine who reported that insect attack on windthrown trees had not occurred up to June, well past the first seasonal attack period. A windfall of the same dating was examined by the writer in the Sequoia National Forest in September which was found to be quite free of attack by both bark beetles and wood borers. This area is believed to be representative of several such windfalls, including that in the South Fork drainage.

INSECTS INVOLVED

Insects found to be responsible for losses during the year are: The western pine beetle, Dendroctonus brevicomis, attacking ponderosa pine; the mountain pine beetle, Dendroctonus monticolae, attacking sugar pine; ponderosa pine, and lodgepole pine; the Jeffrey pine beetle, Dendroctonus jeffreyi, attacking Jeffrey pine; the fir engraver, Scolytus ventralis, attacking white fir and red fir; the fir roundhead, Tetropium abietis, attacking the basal trunk of firs; the California flathead, Melanophila californica, attacking ponderosa pine.

RECOMMENDATIONS

Except for the previous recommendation that control work in the Giant Forest Area be carried out annually and coincidentally with fading of attacked trees, it is believed that no other control work will be necessary next year.

It is suggested that, if possible, inspection trips be made in the late spring through all these areas to detect late fading of winter trees and attacks of the early 1942 season. It is also suggested that the general detection surveys formerly carried out by Park personnel be continued, and if possible, be made a permanent setup of the Park forest administration.

Respectfully submitted,

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Approved by:

J. M. MILLER
Senior Entomologist, In Charge

Berkeley, California
December 23, 1941

Table I. Measured Sample Plot Losses, 1939-1940-1941*

Sample Plot	Species	1939 Number Trees	1939 Trees per A.	1939 Volume b.m.	1940 Number Trees	1940 Trees per A.	1940 Volume b.m.	1941 Number Trees	1941 Trees per A.	1941 Volume b.m.
Woodward Creek 160 acres	J.p.	12	.08	18,000	9	.06	8,440	2	.01	2,550
	L.p.	1	.006	690	0			0		
	Pine Total	13	.09	18,690	9	.06	8,440	2	.01	2,550
	Fir	2	.01	1,850	8	.05	18,790	2	.01	2,770
	Plot Total	15	.1	20,540	17	.11	27,230	4	.02	5,320
Atwell Mill 80 acres	P.p.	1	.01	140	0			1	.01	2,360
	S.p.	0			1	.01	4,080	1	.01	1,500
	Pine Total	1	.01	140	1	.01	4,080	2	.02	3,860
	Fir	1	.01	640	0			3	.03	4,270
	Plot Total	2	.02	780	1	.01	4,080	5	.06	8,130

* Visible loss to September 1941 only. Total loss for 1941 cannot be determined until June 1942.